

WHAT IS CLAIMED IS:

1. An air intake apparatus comprising:  
an air intake port opening outside;  
an air intake path adapted for communicating the air intake  
5 port with a combustion chamber of an engine;  
an opening for suppressing noise emitted from the air  
intake port, said opening being formed in a wall defining the  
air intake path, and being provided one of at a part of said  
wall corresponding to one of an antinode of resonance mode of  
10 standing wave in a full length of the intake path and at a part  
of noise pressure level being high in the intake path;  
a permeable member closing said opening; and  
a noise insulating wall disposed outside the permeable  
member for suppressing emission of transmitting noise passing  
15 through the permeable member.

2. An air intake apparatus according to claim 1, wherein  
resonance frequency of said noise is 200 Hz or lower.

20 3. An air intake apparatus according to claim 1, wherein  
said opening is provided in an air cleaner which is defined by  
a part of the wall defining the air intake path.

4. An air intake apparatus according to claim 3, wherein

said opening is provided in a clean side of the air cleaner.

5           5.     An air intake apparatus according to claim 3, wherein  
said opening is provided in a dirty side of the air cleaner.

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          6.     An air intake apparatus according to claim 1, wherein  
said opening is provided in at least one part of an air cleaner  
hose communicating the air cleaner with an intake manifold, the  
air cleaner hose being defined by a part of the wall defining  
10 the air intake path.

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          7.     An air intake apparatus according to claim 1, wherein  
said opening is provided in a part of an air intake duct which  
is defined by a part of the wall defining the air intake path.

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          8.     An air intake apparatus according to claim 1, wherein  
said permeable member has a water repellent property.

          9.     An air intake apparatus according to claim 1, wherein  
20 said noise insulating wall has a vibration control member to  
prevent face-vibration of the noise insulating wall owing to  
transmitting noise emitted from the permeable member.

          10.    An air intake apparatus according to claim 1, wherein

thenoise insulating wall is integrally formed with the air intake path.

11. An air intake apparatus according to claim 10,  
5 wherein said opening is provided in an air cleaner which is defined by a part of the wall defining the air intake path, and the noise insulating wall is integrally formed with the air cleaner.

12. An air intake apparatus according to claim 11,  
10 wherein said opening is provided in a dirty side of the air cleaner, and the noise insulating wall is integrally formed with the dirty side of the air cleaner.

13. An air intake apparatus comprising:  
15 an air intake port opening outside;  
an air intake path adapted for communicating the air intake port with a combustion chamber of an engine;

an opening for suppressing noise emitted from the air intake port, said opening being formed in a wall defining the  
20 air intake path, and being provided one of at a part of said wall corresponding to one of an antinode of resonance mode of standing wave in a full length of the intake path and at a part of noise pressure level being high in the intake path;

a permeable member closing said opening; and

a vibration control member for suppressing face-vibration of the permeable member and reducing radiant noise from the permeable member.

5           14.    An air intake apparatus according to claim 13, wherein said opening is provided in an air cleaner which is defined by a part of the wall defining the air intake path.

          15.    An air intake apparatus according to claim 14,  
10 wherein said opening is provided in a clean side of the air cleaner.

          16.    An air intake apparatus according to claim 14, wherein said opening is provided in a dirty side of the air cleaner.

15           17.    An air intake apparatus according to claim 13, wherein said opening is provided in at least one part of an air cleaner hose communicating the air cleaner with an intake manifold, the air cleaner hose being defined by a part of the wall defining the air intake path.

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          18.    An air intake apparatus according to claim 13, wherein said opening is provided in a part of an air intake duct which is defined by a part of the wall defining the air intake path.

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